



# MONTANA'S STATEWIDE LONGITUDINAL DATA SYSTEM PROJECT

## (SLDS)

# Agenda

- ▣ Introductions of project team
- ▣ Overview of the Project and its components
- ▣ Describe what a longitudinal data warehouse is
- ▣ Requirements Gathering for RFP
- ▣ Data Warehouse Architecture and Contents
- ▣ District Specific Uses
- ▣ Training and Support
- ▣ Data Governance Structure

This presentation is intended to be interactive

# SLDS Project Team

- ▣ Madalyn Quinlan, Executive Sponsor
- ▣ Sue Mohr, Measurement & Accountability Division Administrator
- ▣ Jim Gietzen, IT Division Administrator
- ▣ Jamey Ereth, Senior Project Manager
- ▣ Erin Thielman, Business Analyst
- ▣ Kurt Wolfe, Computer Systems Analyst
- ▣ Jake Massman, Database Administrator
- ▣ ESP Solutions is our Planning Phase Contractor

# What is a Longitudinal Data System?

A longitudinal data system:

- ▣ Is a data system capable of tracking student information over multiple years in multiple schools.
- ▣ Montana's data system will integrate existing, transformed data extracted from multiple source systems such as AIM, MAEFAIRS, and Assessment.
- ▣ Will enhance our ability to efficiently and accurately manage, analyze, and use education data, including individual student records.
- ▣ Will help the state, districts, schools, and teachers make data-driven decisions to improve student learning
- ▣ Will facilitate research to increase student achievement and close the achievement gaps.

# What is a data warehouse?

## The GEMS Data Warehouse:

- ▣ Will be a repository where the data from the various sources resides.
- ▣ Will house data concerning students served in the K-12 public education system.
- ▣ Will be capable of linking student and educational information over multiple years, across multiple schools and districts.
- ▣ Provides the ability to develop key metrics from multiple areas and analyze them in a single view.
- ▣ Will be structured to maintain large amounts of related, historical data for analysis and reporting.
- ▣ Provides for easy reconstruction of "snapshots" of historical data, as well as the ability to link such snapshots over time using certain criteria.
- ▣ Is NOT a typical "transactional" system used for day-to-day operations

# How will the data warehouse enhance our education system in Montana?

- ▣ Improve Montana's ability to comply with state and federal reporting mandates.
- ▣ Allow for the exchange of data between the OPI and school districts related to student achievement, enrollment, attendance, dropouts and graduation rates in a manner that will allow policy makers to evaluate the effectiveness of education services and strategies.
- ▣ Improve the state's ability to collect and report data, allow rapid response to requests and justification for different funding, enable districts to benchmark their own educational programs, assist researchers, allow parents and community greater access to data on their students and their schools.
- ▣ Pull together student records, student assessment, personnel, finance, school infrastructure data, and data stored on the many systems that currently exist.

# SLDS Project Components

RFP for SLDS

Technical  
Enterprise  
Architecture

System for  
Data  
Governance

# Preliminary SLDS Project Timeline

Task	Start	Finish
Develop enterprise wide Data Architecture	10/1/2009	9/30/2010
Establish a Data Governance Structure	7/1/2009	6/30/2013
Elicit and develop functional and technical requirements for RFP to build the Data Warehouse	5/17/2010	10/29/2010
Issue RFP for building the Data Warehouse	12/1/2010	12/1/2010
Finalize Contract to build Data Warehouse	4/1/2011	4/1/2011
Build Data Warehouse	4/1/2011	6/30/2013
Migrate data from numerous legacy data systems to the Data Warehouse	7/1/2011	6/30/2013
Train staff, LEAs and other stakeholders on Business Intelligence Tools	7/1/2012	6/30/2013
Implement Business Intelligence Tools	10/1/2011	6/30/2012

# Requirements Gathering for RFP

- ▣ Key OPI Stakeholder meetings have been being held to elicit data needs and system requirements for the RFP.
- ▣ Key LEA Stakeholder meetings have taken place. We have met with the following School Districts:
  - Billings
  - Butte
  - Dillon Elementary
  - Dillon High School
  - Fromberg
  - Miles city

# Reporting and Analysis Tool Requirements

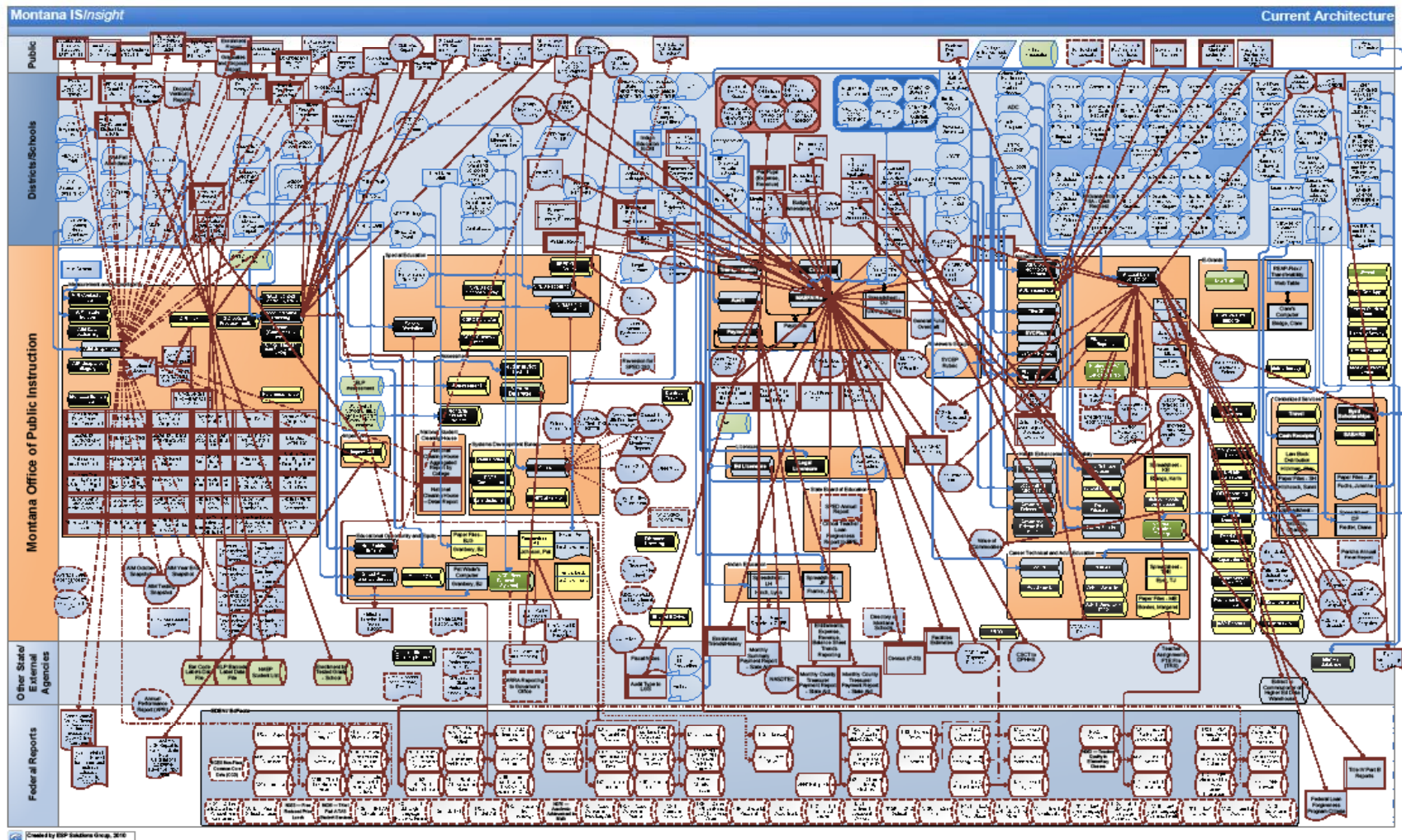
A series of demonstrations by vendors specializing in Educational Data Systems were held. Several key stakeholders were in attendance and were able to provide feedback to the SLDS project team as to what functionality is most desired from a Business Intelligence tool. Those who provided presentations were:

- ▣ SAS
- ▣ Choice Solutions
- ▣ Oracle
- ▣ Cognos
- ▣ Northrop Grumman/Unissant
- ▣ SAP
- ▣ eScholar

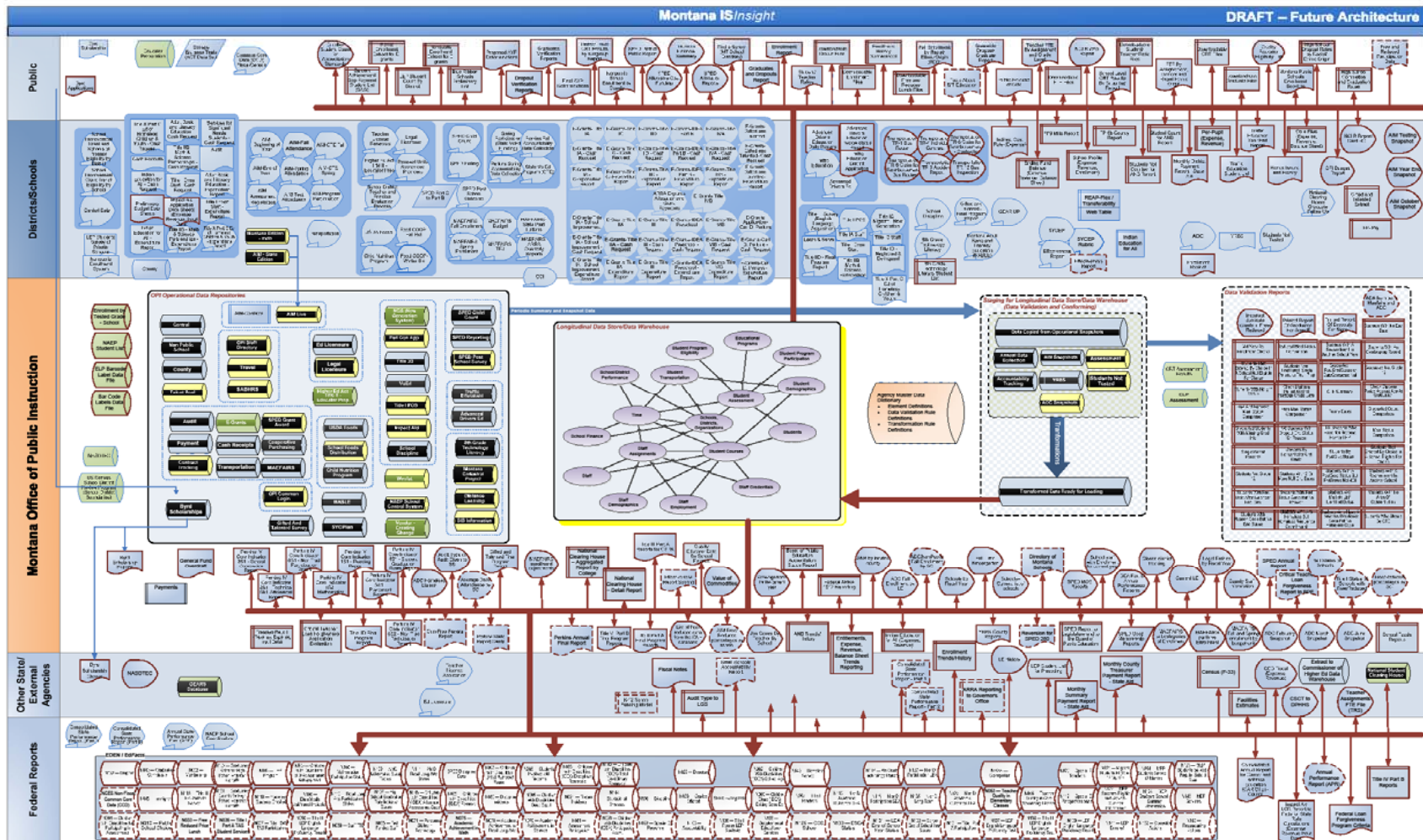
**Questions?**

# Technical Architecture

## Current View of OPI Data Systems



# Technical Architecture Future View of Data Warehouse



# How will we access the data?

A business intelligence product be installed onto the data warehouse and will enable the OPI, Districts, schools and other authorized users to easily develop and store analysis for use by a broad community as well as provide the ability to put powerful analysis capabilities into the hands of key stakeholders.



# Loading data into the Data Warehouse – Year 1

## Assessment

- CRT/ CRT-Alt
- Students Not Tested
- Accountability Tracking
- ELP
- 8th Grade Technology Literacy

- ▣ MAEFAIRS
- ▣ OPI Central
- ▣ SPED Child Count
- ▣ SPED Reporting
- ▣ County Fiscal Data
- ▣ GEAR UP

- ▣ College Entrance Tests
- ▣ Historical data (Annual data collection, Enrollment, Graduate, Drop-out, Financial data)
- ▣ School Discipline
- ▣ ESEA 21st Century – Creating change initiative
- ▣ Homeless, Neglected, Delinquent
- ▣ Spring Participation (State VO Ed Funding)
- ▣ Common Core Data (CCD) Fiscal/Non-Fiscal
- ▣ Annual State Performance Plan (SPP)

# Loading data into the Data Warehouse – Year 2

- ▣ Non Public School Enrollment
- ▣ MABLE
- ▣ Migrant Student Information Exchange (MSIX)
- ▣ YRBS
- ▣ CSPR
- ▣ E Grants (begin in year 2)
- ▣ REAP-Flex/Transferability
- ▣ GED
- ▣ Child Nutrition Programs
- ▣ LEP Non Public Student Count
- ▣ Advanced Driver's Ed and Traffic Ed
- ▣ Pupil Transportation
- ▣ Gifted and Talented - Final Program Report
- ▣ ESEA Title IID - Final Program Report
- ▣ ESEA State Vo Ed Program (CTE)
- ▣ ESEA Title IC - Migrant - New Generation
- ▣ Annual data collection

# Loading data into the Data Warehouse – Year 3

- ▣ Cash Receipts
- ▣ BYRD Scholarships
- ▣ NAEP
- ▣ 5Y CEP
- ▣ Cooperative Purchasing
- ▣ Effectiveness Report
- ▣ School Staffing
  - ▣ Title IC Staff
- ▣ Educator Licensure
- ▣ ESEA Title III Survey
- ▣ Educator Preparation
- ▣ ESEA Higher Ed Act Title II - Educator Prep
- ▣ NASDTEC
- ▣ Office of Civil Rights survey
  - ▣ OPI's (school facility and policy review)
  - ▣ School's (80% redundant data, 20% athletic program info)
- ▣ Learn & Serve
- ▣ Renewal Units Approved Providers
- ▣ US Census School District Review Program (School District Boundaries)
- ▣ School District Teacher and Principal Evaluation Process

# District Specific Uses

- ▣ Ability to create custom content
- ▣ Ability to create custom groups of students
- ▣ Ability to identify “Peers”
- ▣ Ability to perform cross district comparisons

# Training and Support

- ▣ Initial and ongoing training will be provided to the schools, district, OPI and other levels of users of the data warehouse and the selected BI tools.
- ▣ Various types of Support and Training will be provided such as:
  - WebEx
  - Face-to-face
  - Video Recordings Available On-demand
  - Answers FAQ's
  - Help Desk
  - Context Sensitive Help
  - Query-able Knowledge Base
  - Very Modularized for “Just-in-Time” Training

# How will we secure the data in the warehouse?

- ▣ The confidentiality of the data in the warehouse is of primary importance
- ▣ Different types of users will have access to different sets of information
- ▣ Access to student level data will be tightly controlled and will require authorization by the OPI and a secure login to the system
- ▣ Final policy on what data will be available will be determined as part of the project

# Data Governance

# What is Data Governance?

Data Governance is the body for establishing policies and procedures that clearly define standards for data collection, analysis and reporting.

The Data Governance Team has final authority on establishing the mandatory standards for individuals, groups and systems that touch data. This includes monitoring of, and ongoing adherence to, these standards.

# Data Governance Committee

- ▣ Establish policies and procedures that clearly define standards for data collection, analysis, and reporting
- ▣ Are the final authority on establishing the mandatory standards for individuals, groups, and systems that touch data
- ▣ Monitor and ensure adherence to standards

# Core Data Stewards Committee

- ▣ Collectively ensure awareness of data collection and reporting requirements for all of OPI.
- ▣ Review and approve all changes to OPI data collection and reporting.
- ▣ Propose new business rules as necessary.

# Data Stakeholders Committee

- ▣ Right now internal to OPI
- ▣ Considering an advisory group that includes district staff as well as OPI staff
- ▣ Regular meetings to obtain feedback on data collection policies and procedures, including training and support

# Data Privacy and Security Committee

- ▣ Meet as needed to consider proposals for new data collections specifically with respect to data requests and research proposals both within and outside of OPI.

# Data Governance Manual

- ▣ Data Policy for how OPI will manage data, including protection of confidentiality and provision of access
- ▣ Annual data management plan and collection calendar
- ▣ Data sharing process
- ▣ Committee structure and procedures
- ▣ Security

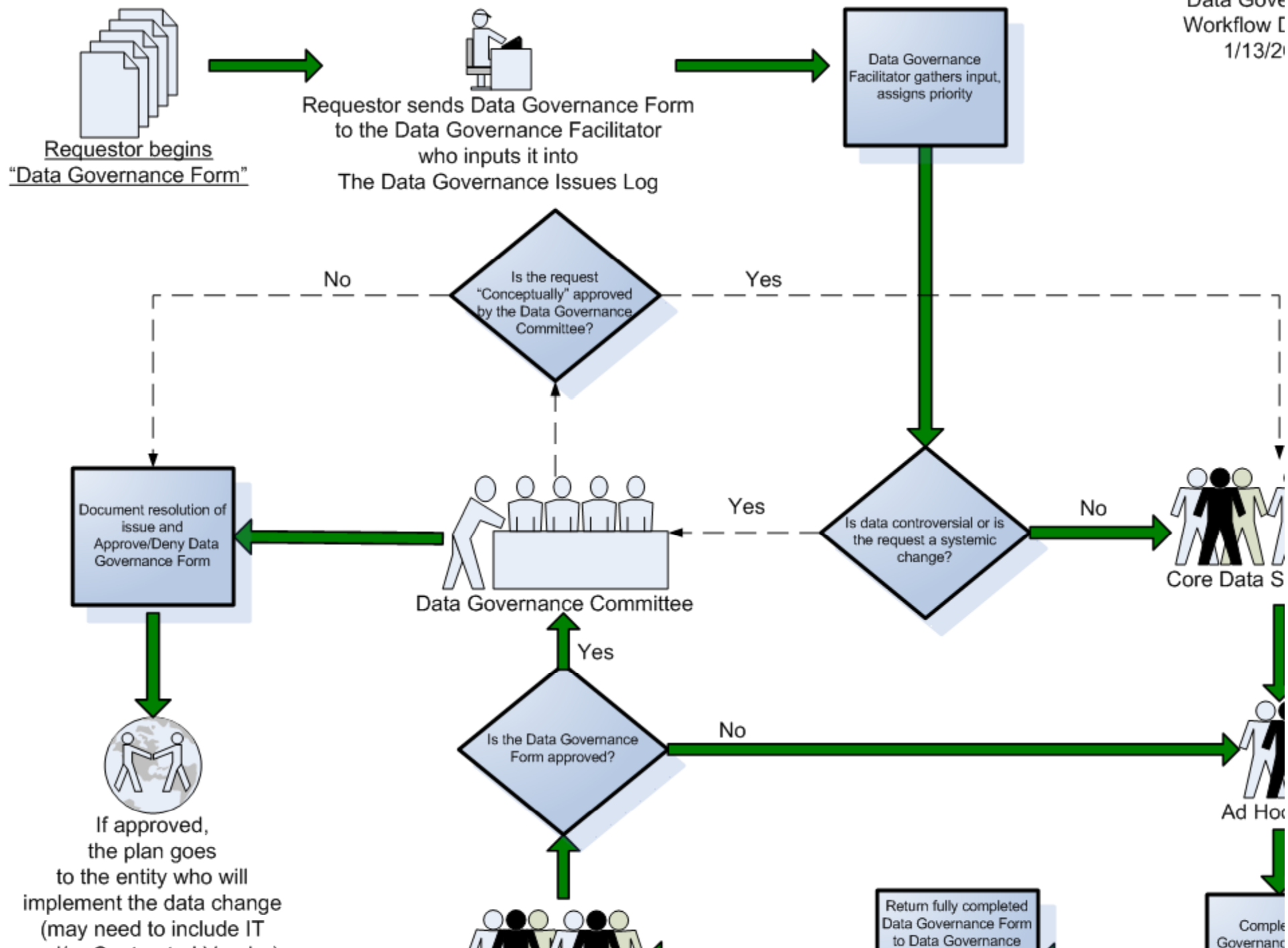
# Data Collection Procedures

## ▣ Benefits

- Promote high quality data collection with clear expectations for what will be submitted, when data are required, and how the data will be used
- Reduce data redundancy

## ▣ Components

- Data collection calendar
- Standard data elements/metadata
- Business rules/data quality
- Approval process for new collections or changes



**Questions?**